

E-CHOKE



FEATURES

- Variable-speed drive and faster open/close speeds
- High torque
- Zero gear lash
- Three modes of operation
- Electronic pressure sensing and transmitting
- Reduced cabling requirements
- Advanced position enunciation
- Retains all the features of the 5k, 10k and 15k SUPERCHOKE units
- Enhanced third-party communication capabilities
- Small and portable
- Programmable

BENEFITS

- Precise choke control and quick response during critical well-control situations
- Smooth closure, even with debris in the well
- Redundant operation for maximum control
- Safer operating environment

The E-CHOKE[†] drilling choke from M-I SWACO is the latest evolution of a proven idea — a remotely operated, electrically actuated, variable-speed version of the SUPERCHOKE[†] drilling choke.

The small, portable, remote actuator control panel is easily carried to the drill floor by an operator and will replace the large choke console currently required for hydraulic operation. Although the E-CHOKE unit has many outstanding features, they all have one goal — to give the operator a high degree of control, safety and speed in well-control situations.

How it Works

Variable-speed drive. The operator can control the speed at which the choke is opened or closed during a well-control situation. Control of speed gives the operator precise choke-positioning adjustment during critical well-control situations.

Faster open/close speeds. Eight seconds from full-open to full-close. The operator can rely on a quick response from the actuator assembly during well-control operations.

High torque. The E-CHOKE system is capable of over 19,400 in.-lbs (2,191.9 Nm) of torque and can sever a ½-in. (12.7-mm) alloy steel rod, demonstrating its ability to clear obstructions that may become lodged between the plates while drilling or flowing back a well, and still attain a fully closed position.

Electronic pressure sensing and transmitting. The design of the E-CHOKE unit eliminates the need for hydraulic hoses and fittings. This greatly reduces calibration and maintenance requirements while enhancing accuracy.

Three modes of operation. Remote at driller's console; local at the choke manifold; manual at the choke valve, using the hand-wheel. Whether on the drill floor or at the choke manifold, the E-CHOKE system allows accessibility for an operator to quickly respond to a well-control situation. These three modes of operation also provide redundancy and ensure that the operator has control of the choke at all times.

Reduced cabling requirements. The E-CHOKE unit requires only one communication cable between the remote and the local console. Simplified cabling lessens tripping hazards and troubleshooting while providing the operator with the best available transmission medium for data communication.

How it Works (continued)

	Pressure	Holding/ Moving	Speed	Maximum Amps
Motor and drive only	N/A	H	100%	.472
	N/A	M	100%	.832
With new choke body	N/A	M	50%	1.248
	N/A	M	100%	2.176
	10,000 psi (690 bar)	M	~1%	1.44
	10,000 psi (690 bar)	M	50%	2.152
	10,000 psi (690 bar)	M	100%	3.624
	10,000 psi (690 bar)	M	100%	3.624

Zero gear lash. In critical well-control situations, the operator must rely on the choke valve to open and close without delay. The E-CHOKE drilling choke provides absolutely no play in the gearbox when actuated.

Small and portable. The system is designed to be transported by an operator and easily placed in the doghouse or on the driller's console.

Advanced position enunciation. The LCD digital display includes both the percentage (%) of open/close and the choke-bean size. The operator can closely monitor the choke's precise position and the rate of change in the choke's position, giving a "feel" for the well during operation. The advanced position enunciation is provided at both the rig floor and the choke manifold for greater accessibility during critical well-control operations.

Retains all the features of the 5k, 10k and 15k SUPERCHOKE units. The E-CHOKE system electric actuator easily adapts to the choke valve body. It uses the same hole pattern as the hydraulic actuator and continues to provide the operator a reliable and rugged pressure-control system that has been proven within the industry.

Enhanced third-party communication capabilities. The E-CHOKE system can record data and communicate via enhanced third-party communication capabilities to external data-acquisition systems. Access to pressure-control data can greatly enhance an operator's ability to evaluate frac flowbacks, well-control problems, leak-off tests in real-time as well as reviewing lessons learned from historical data.

Programmable. The programming feature has been used extensively during performance testing and well-control training exercises. The operator will have an opportunity to set limitations on operating parameters such as leak-off test pressures, flowback pressures and maximum casing pressure.

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